

The invention is claimed as follows:

1. A hydraulic punch comprising:

a hydraulic ram section;

5 a hydraulic pump section; and

an elongated flexible hydraulic hose connected between said hydraulic ram section and said hydraulic pump section, said elongated flexible hydraulic hose permitting movement of said hydraulic ram section relative to said hydraulic pump section.

10 2. A hydraulic punch as defined in claim 1, wherein said hydraulic pump section can be rotated 360 degrees about said elongated flexible hydraulic hose.

15 3. A hydraulic punch as defined in claim 1, wherein said hydraulic pump section includes a reservoir for storing hydraulic fluid, said hydraulic fluid capable of moving from said reservoir of said hydraulic pump section, through said hydraulic pump section, through said elongated flexible hydraulic hose, and into said hydraulic ram section.

4. A hydraulic punch as defined in claim 1, wherein said hydraulic ram portion comprises:

a housing having a passageway extending therethrough;

5 a ram positioned within said passageway of said housing, said ram capable of sliding within said passageway of said housing, said ram dividing said passageway of said housing into a first chamber and a second chamber, said ram having a bore therethrough which extends from said first chamber to said second chamber;

a retainer connected to said housing for closing an end of said passageway, said retainer having an opening therethrough; and

10 a normally expanded spring positioned within said second chamber between said ram and said retainer.

5. A hydraulic punch as defined in claim 4, wherein said ram has a cavity therein for connection of a draw stud thereto.

15 6. A hydraulic punch as defined in claim 4, wherein said bore extending through said ram has a first portion which is aligned with a central axis of said ram and a second portion which is radial to said central axis of said ram.

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7. A hydraulic punch as defined in claim 1, further including a first hydraulic hose connector at an end of said elongated flexible hydraulic hose and connected to said hydraulic ram section, a second hydraulic hose connector connected to an opposite end of said elongated flexible hydraulic hose, and said hydraulic pump section including a coupler connected to said second hydraulic hose connector.

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8. A hydraulic punch as defined in claim 1, wherein said hydraulic pump section comprises:

10 a pump block having a first bore extending therethrough, and a second bore extending at an angle to said first bore;

a plunger housed within said second bore of said pump block;

a first handle having a reservoir therein for storing hydraulic fluid, said reservoir being in communication with said first bore of said pump block such that said hydraulic fluid can move into said first bore of said pump block; and

15 a second handle attached to said plunger and to said pump block, said second handle capable of being moved from a first position to a second position in order to move said plunger within said second bore of said pump block, said movement of said plunger within said second bore of said pump block causing said hydraulic fluid to move from said reservoir to said first bore of said pump block.

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20 9. A hydraulic punch as defined in claim 8, wherein said hydraulic pump section further includes a coupler attached to said pump block, said coupler being attached to said elongated flexible hydraulic hose.

10. A hydraulic punch as defined in claim 9, wherein said hydraulic pump section further includes a plate securing said coupler to said pump block.

11. A hydraulic punch as defined in claim 10, wherein said pump block can be rotated 5 360 degrees about said coupler.

12. A hydraulic punch as defined in claim 1, wherein said hydraulic ram section is capable of being rotated from 0 degrees to an angle greater than 90 degrees relative to said hydraulic pump section as said elongated flexible hydraulic hose is capable of bending from 0 10 degrees to an angle greater than 90 degrees.

13. A hydraulic punch as defined in claim 1, further including a hose cover, said elongated flexible hydraulic hose being generally encapsulated within said hose cover.

15. 14. A hydraulic punch as defined in claim 13, wherein said hose cover prevents said elongated flexible hydraulic hose from being flexed at an angle greater than approximately 90 degrees relative to said hydraulic pump section such that said hydraulic ram section cannot move more than 90 degrees relative to said hydraulic pump section.

15. A hydraulic punch comprising:
a hydraulic ram section;
a hydraulic pump section;
flexible means for connecting said hydraulic ram section and said hydraulic pump
5 section, said flexible connecting means permitting movement of said hydraulic ram section
relative to said hydraulic pump section.

16. A hydraulic punch as defined in claim 15, wherein said hydraulic pump section can be
rotated 360 degrees about said flexible connecting means.

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17. A hydraulic punch as defined in claim 15, wherein said flexible connecting means is
an elongated flexible hydraulic hose.

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18. A hydraulic punch as defined in claim 17, further including a first hydraulic hose
connector at an end of said elongated flexible hydraulic hose and connected to said hydraulic
ram section, a second hydraulic hose connector connected to an opposite end of said
elongated flexible hydraulic hose, and said hydraulic pump section including a coupler
connected to said second hydraulic hose connector.

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19. A hydraulic punch as defined in claim 15, wherein said hydraulic pump section
includes a reservoir for storing hydraulic fluid, said hydraulic fluid capable of moving from
said reservoir of said hydraulic pump section, through said hydraulic pump section, through
said flexible connecting means, and into said hydraulic ram section.

20. A hydraulic punch as defined in claim 15, wherein said hydraulic ram section is capable of being rotated from 0 degrees to an angle greater than 90 degrees relative to said hydraulic pump section as said flexible connecting means is capable of bending from 0 degrees to an angle greater than 90 degrees.

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21. A hydraulic punch as defined in claim 15, further comprising means for protecting said flexible connecting means from damage.

10. 22. A hydraulic punch as defined in claim 21, wherein said protecting means is a hose cover, said elongated flexible hydraulic hose being generally encapsulated within said hose cover, said hose cover preventing said flexible connecting means from flexing to an angle greater than 90 degrees relative to said hydraulic pump section..